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ABSTRACT

A study investigated how a knowledge or lack of knowledge of basic text structures, such as comparison and contrast and cause and effect, contributes to the reading process in remedial adolescent readers. By observing a group of graduate students and through the close study of a few adolescent case studies, a researcher attempted to determine if the teaching of text structures is useful. Results showed that when there is good comprehension there is little need to be aware of text structures. There is an "automaticity" to the use of expository text structures that is analogous to phonic awareness. That is, many students were never taught phonics explicitly but they use the system when confronted with a new word; similarly, most students were never taught organizational text systems yet they are aware of them when they need to be. Further, when it is not automatic, knowledge of text structures may actually cause interference in the reading process. A session with one adolescent student suggests that the knowledge of text structures can be irrelevant to comprehension. Work with another student suggests that scholars need to measure more carefully the text-to-reader match. Teaching about text structures when the text is too easy is not worthwhile; teaching about text structure when the text is very difficult does not seem helpful. Perhaps, further research could be sensitive to identifying text that is "in-between" ("instructional") in difficulty. (Contains 22 references.) (TB)

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Does knowing about text structures help disabled, adolescent readers?

An Exploratory Study of

Adolescents' Awareness and Use of Global Coherence

presented at the National Reading Conference
December 1, 1994

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Introduction

Is this text considerate? That is, is it organized so that it is an aid to your reading? Would you know if it were not considerate? Would your knowledge of its considerateness depend on whether you could understand it? MaryLou taught me about this issue during the six months in which I worked with her. She had an assigned eighth grade American History text, a very difficult text that sometimes did not assist her in understanding new information. Furthermore, in the fall when I first started to work with MaryLou she was not very fluent in her reading and she had great difficulty making sense of what she read. What was revealing, though, in the development of this reader is that she became aware of the inconsiderateness of her textbook. See the transcript of a particular lesson in Figure #1.

Figure #1

p. 515 The Story of America by John Garraty (1989) Orlando: Holt, Rinehart (Harcourt Brace).

[Oral review of what she had read/studied since our last lesson. MaryLou missed some key points, so I ask her to re-read silently.]

M: They never say the name of the bill he introduced.
B: Yes! Whoever wrote this book made it confusing by not mentioning the name of the bill until the bottom of the second page. You have to read two whole pages until you get the name of the bill they talk about in the first paragraph.

What did MaryLou have to know to be able to comment on the lack of considerateness of a text? It seems as though MaryLou not only had to comprehend the text, but she had to have some knowledge about how text should be organized. She could say that the writer did not organize the ideas in a helpful way; she was aware that there was a lack of fit between her

schema of organization and the author's. Armbruster (1984) has called this aspect of text "global coherence".

MaryLou reminded me that for many years I have wanted to know whether adolescents looked at how texts were organized when they are reading. During my twelve years as a secondary reading specialist in the public schools, I had many opportunities to explicitly teach about expository text structures. I used a variety of formats. I taught small groups (approximately six students) or classes (ranging in size from six to twenty-four) of mostly disabled readers. When I included as, part of my lesson plan, direct instruction of the four or five basic structures [see figure #2], my sense was that the results of instruction were disappointing. Some students could parrot back the four or five structures that they had learned, but my informal assessments revealed that students did not seem to be able to apply the knowledge of expository text structures to new texts.

Figure #2

EXPOSITORY TEXT STRUCTURES
listing (can be time order, spatial order, ranking, etc.)
description
cause/effect
problem/solution
compare/contrast
(according to Englert & Hiebert, 1984; Meyer & Freedle, 1984)

For years, my target population was adolescents who struggle with reading. For years, I sought to impart to them the awareness of and the skill in utilizing expository text structures. Others had similar goals. For example, I noticed that textbooks written for students in college developmental reading programs often include lessons concerning organizational patterns [used synonymously with "text structures" throughout this report] (Hancock, 1991; Johnson, 1990; McWhorter, 1992). Many programs devote considerable time to the teaching of expository text structures. As a teacher, should I? As a professor of teacher education, what should I tell my students about this type of instruction?

To explore this issue of global coherence, I worked with groups of adolescent and adult students. Some had less developed reading skills than MaryLou; others were proficient readers who encountered very difficult text. Later, I explored this issue in greater depth with a few individual students.

Background

Knowledge of key text structures has been discussed and researched for at least the last twenty years (Meyer, 1975; Meyer, Brandt, and Bluth, 1980; Anderson and Armbruster, 1984). A variety of researchers have described four, five or more different structures typically found in

expository text. Anderson & Armbruster (1984) have a list of seven types:

(i) Cause/effect--the interaction of at least two ideas or events, when one is the cause and the other the effect;

(ii) Temporal sequence or time order--two or more events, objects, or ideas presented in chronological order.

(iii) Comparison/contrast--a discussion and illustration of the similarities and differences between two or more things;

(iv) Problem/solution--the interaction of two factors, where one is the problem and the other is the solution to that problem;

(v) Simple listing--lists of ideas, events, or items in random order;

(vi) Definition/examples--the author defines A and gives examples of A;

(vii) Description--the author describes the characteristics, properties, features, traits, and functions.

One line of research has established a correlation between knowledge of text structures and amount of recall. As a consequence, Meyer and others have developed theoretical models of the reading process that includes knowledge of text structures as a prerequisite to reading comprehension (Meyer, 1975 as cited in Pearson & Camperell, 1994).

Advancing this line of work, Meyer and Freedle (1984) hypothesized and collected data to support their conclusion that more complex structures (comparison, problem/solution, and causation) would be more easily remembered than the collection/description. Others have collected data that shows differing results (Kletzion, 1992).

Building on Meyer's work, several researchers have also found that knowledge of text structures is developmental (Taylor, 1980; McGee, 1982). Van Evera (1994) tried to control for the variable of prior knowledge by asking 4th and 6th graders to read passages on a variety of topics. Sixth graders had better retellings and use of structure, but differences in text structure were found to have little effect on the number of idea units remembered. Garner and Gillingham (1987) point out that research that compares students of different ages may need to corroborate self-reports with performance measures. In their study, for example, the seventh graders were better able to report on what makes a good paragraph than the fifth graders. Yet the students performed equally poorly on constructing good paragraphs using specialized computer software.

Kletzion (1992) departed from the methodology of retellings and utilized interviews of students as they completed--or tried to complete--Cloze passages. The tenth and eleventh graders used passages on a variety of topics that represented three different text structures. Her research brought in the wider issues of strategy use and text difficulty. In her discussion, Kletzion noted the confounding variable of prior knowledge.

Furthermore, whether readers were proficient or less proficient did not seem to affect their use of text structures. A concern about Kletzion's work, though, is that her definition of less proficient was any student who scored below fifty percentile on a standardized reading test. The

range of readers is perhaps too great in this "less proficient" part of the sample. For example, a n student who scored 49 percentile would probably be closer in reading ability to those labelled proficient than those who had more severe reading difficulties. Because she found that subjects in both groupings used the same strategies for the three types of passages, there is some question whether her study included truly disabled readers. The question of what very poor readers do when reading expository text needs further exploration.

During the last decade, educators/researchers have been looking at instructional techniques and resulting gains by students relative to the teaching of expository text structures. Taylor (1992) states that "students seem to benefit from some formal instruction in text structure to improve their comprehension and recall of expository and narrative text." She cites research about instructional activities such as written summarization, use of headings, and a modified SQ3R approach, all of which do not seem to include explicit instruction in text structures. In two different studies, fifth graders and seventh graders were given instruction on use of hierarchical summaries, a writing task in which they picked out a general statement and a few key details; students had improved recall for unfamiliar text (Taylor, 1982; Taylor and Beach, 1984). One study that Taylor discusses (Slater, Graves, and Piche, 1985 cited in Taylor, 1992) does address instruction of organizational patterns more directly. In that work, ninth graders matched the social studies passage that they read with a grid that was one of four top-level structures (claim/counter-claim, claim, support, conclusion, cause/effect, and problem/solution). As they read, students took notes by writing phrases in appropriate slots on the outline grid. Students using this note-taking system had better recall of the passage than those who 1.) were instructed to read and take detailed notes of the passage, 2.) were given a written example of the passages's organizational structure prior to reading, or 3.) were told to read the material.

Thus, this study is built on the work of other researchers who found evidence about these issues:

1.)There are correlations between knowledge of text structures and retellings (both the quantity and the organization).

2.)Knowledge of text structures seems to be developmental, though it is unclear whether that knowledge is the product of greater exposure to expository texts or some other factor, such as normal cognitive development.

3.)Prior knowledge/text difficulty seems to be a significant confounding variable when examining the reader and text structure interaction.

4.)Formal teaching of text structure has been done in a variety of ways. Some of these methods have proved helpful to students.

Research Questions

This exploratory study was focused on the following questions:

1. Do disabled readers use text structures for expository text reading after having learned about them? Does knowing about text structures assist readers who are having difficulty with a text?

2. Is the explicit teaching of text structure effective or efficient for most students?
3. Is the explicit teaching of text structure advisable for disabled readers?

A Range of Readers

Groups of student

One area of exploration concerned whether knowledge of text structures could be helpful if there is a breakdown in comprehension among proficient readers. A class of twenty graduate students--most of whom are classroom teachers--was asked to describe a situation in which they were in the role of a "disabled reader." They chose to describe their struggles with medical texts, auto mechanics manuals, law case books, etc. Subsequently, they participated in a lecture-discussion about expository text structures. When they went back to their same texts, they were asked to report in writing on their comprehension again. Nineteen of the twenty students reported that they had no increase in comprehension. The written reports described the source of their "disability" in reading those texts as limitations in prior knowledge of the particular topics. The lack of background knowledge was so substantial that offering the assistance of text structures was of no benefit. Several of the students pointed out, also, that in much real life text, the organizational patterns are not "pure" (see Figure # 3).

Figure #3

Graduate students' reports about use of text structure in a simulated "disabled reader" activity.

Student # 1: If the disabled reader is not familiar with text structure this could be a confusing strategy to use since texts use a variety of these structures to organize information. It could make the disabled reader even more confused.

Student #2: When the structures blend or are not obvious, it would become a hinderance for me because my focus wouldn't be on reading the material but rather on figuring out what type of written structure it is.

In a different activity, graduate students did metacognitive assessments of their reading at several different places in a reading passage. In written remarks, they said that their motivation to read, as well as their comprehension, decreased at certain points in the text because the author's organizational pattern was unusual or, according to some, inconsiderate. Most of these subjects did not know the text structure labels and they did not devote cognitive

processing energy to categorizing the text into various structures because it did not assist their comprehension. In fact, unless there is explicit instruction, students of all ages do not have labels for distinct text structures. Yet, as MaryLou illustrated in the introduction, we often know when a text is inconsiderate, particularly when it interferes with our comprehension.

Case Study Explorations

To further understand how knowledge of text structures affects comprehension, I changed my methodology to a case study approach. A few students were chosen to examine in greater depth the thinking processes about text structure. Each student helped to elucidate some of the issues relating to the teaching of expository text structure.

The case studies of Duncan, Anne, and Marsha represent a variety of adolescents in terms of age, strengths, and needs. Each was given individual tutoring. Explicit teaching of four patterns of expository text--collection/description, cause/effect, problem/solution, and compare/contrast--occurred at different points in the lessons. Duncan and Anne's instruction took place over three or more lessons. Reinforcement of the patterns occurred over several lessons using the content of magazine articles (Duncan) or a history textbook (Anne). In contrast, Marsha spent only two hours in instruction and assessment.

Duncan

Duncan was a seventh grade student who received special education services because of a learning disability (information processing). He was highly motivated to achieve in school, but had severe difficulties in written expression and serious problems with reading comprehension. He had good word attack skills and had a substantial sight word vocabulary. Therefore, he read fluently passages typically found in fifth and sixth grade textbooks. After six months of one-on-one tutoring, Duncan was also fluent with most of the reading found in his seventh grade English anthology.

Because of upcoming state-mandated assessments, we first worked on written expression. Only at the end of our time together did we look more carefully at the reading of expository texts. Duncan had great difficulty getting ideas onto paper (or rather, computer). I worked on making connections between his ideas in order to generate logically organized writing. By means of pre-writing activities, such as webbing and graphic organizers, he began to see that his sentences should have some connection to one another (coherence).

According to the verbal report data, Duncan may have used the text structures to help organize his thoughts and aid his comprehension. Even in a lesson where he received explicit instruction (re-teaching) about the text structures, he did not use any of the labels for the patterns (e.g., "problem," "solution,""cause," or "effect") but he did use the word "because," and what is more important, his re-telling or summarizing showed the implicit use of these patterns. A partial transcript is reproduced in Figure #4.

Figure #4

Duncan chooses to read an article entitled, "Baby Beluga" (p.86) New Age Journal

B: What predictions can you make from the pictures and the headings?
D: I think it's going to talk about animals dying and then coming back to life, like seeing a light in a tunnel.
B: Great. So you see it as similar to Near Death Experiences in people, the light, etc.?
[Duncan had previously read several articles on Near Death Experiences.]
D: Yes.
B: So, the text structure may be cause-effect or problem-solution. The problem or cause being the death of the beluga....and what you'll be looking for is the effect or solution.

Duncan reads the article.
B: Can you summarize what you read?
D: Makea had a baby boy whale which wasn't breathing because its nostril hole wasn't breathing. After it died, they took the baby out of the water and Makea was circling and confused.
[The summary contained the key points from the article.]

Do we know from this data whether the knowledge of text structures helped Duncan in his accurate summary of the article? How can we know the contribution of this component of the comprehension process? Furthermore, the instructional activities--such as predicting and summarizing--contributed to the comprehension. An instructional intervention that any teacher might use as follow-up would also be related to the text structure. For example, a teacher might ask: "How is what you read about the beluga dying similar or different from the Near Death Experience articles you have read?"

Although it is difficult to determine whether Duncan used the organizational patterns when reading, he showed some gains in organizing his writing.

Anne

A twelfth grader who had excellent decoding and sight word vocabulary, Anne still struggled with comprehension beyond the literal level. She had great difficulty with twelfth grade level texts and did poorly on S.A.T. reading subtests. She became a good note taker over the course of the one-on-one tutoring (more than six months), but she still had trouble composing logical short essays. Her organizational skills for written expression were lacking.

Anne had success with reading and retelling narrative text, such as novels. She was largely unsuccessful with reading her government text, although she was highly motivated. I asked Anne to read and discuss several passages from her textbook after we reviewed background information related to the topic, state and local governments. On these two

compare-contrast passages Anne missed the key information and did not pick out the expository text structure. A partial transcript is reproduced in Figure #5

Figure #5

American Government
(p.232)
[In some countries, citizens commonly express mistrust, disdain, or fear of their political leaders. In the American political culture, however, most people have relatively strong confidence and trust in public officials."]

After Anne read the above passage, she spontaneously remarked:
A: It's false!
B: Why is it false?
A: Because they do trust their leaders and have confidence in the leaders.
B: So, let's look more carefully at the passage. Notice the word "however". Let's see what that does to the ideas in the paragraph....

At a different session, Anne read four [easy] passages that were designed for a study that used subjects in grades four and six (Van Evera, 1994). Anne gave complete retellings of the information in the articles, and correctly explained their organizational patterns (collection-description, cause-effect, problem-solution, and compare-contrast).

Anne did not seem to use the text structures when reading her government textbook, either when it was manageable or when it was too difficult for her. She did use the organizational structures, when asked to, on easy passages. Noticing the patterns of organization did not seem to aid her either when she was successful or when she was unsuccessful at the comprehension task.

Marsha

I gave Marsha, a ninth grader, an interest inventory and a reading self-assessment when we first met. I learned that she was an accomplished actor, but that she was worried about an upcoming audition because she did not have fluent oral reading. She also stated that she didn't like to read and that she had poor comprehension.

Marsha orally read the word lists and the first junior high level expository passage from the Qualitative Reading Inventory (Caldwell & Leslie, 1990). She had some prior knowledge about the topic, fireworks. On an oral and written retelling, Marsha scored in the instructional range. When asked how the passage was organized, she said that she didn't see any pattern. When doing her written retelling, she noted that it was a description.

At that point in the session, I described the four main types of text structures [description; cause-effect, problem-solution, compare-contrast]. I created a visual aid and

used many examples from acting or stage work to illustrate how the four types of structures were distinct. Marsha chose to read the next passage, "Diamonds", silently. She had some prior knowledge on this topic, but very poor recall as measured by her retelling and attempted answers to comprehension questions. Her score was in the frustration range for this passage.

Finally, Marsha was asked to look at the passage again to detect any of the four text structures. She isolated three distinct types of text structure:
"Coal is considered a mineral, but diamonds are not."--*That's a comparison.*
"If the passage has been worn by running water..." --*That's cause and effect.*
"When they explode, they explode with other objects."--*That's description.*

Thus, Marsha had much more insight about the text structures in the passage in which she had poor recall. She was able to pick out fewer text structures in the passage in which she had better comprehension.

Further research may take a look at whether she processed more deeply the sections of text in which she was able to describe the organizational patterns. Perhaps, because she was processing more on those sections, she didn't remember any of the other parts of the passage. In the practical world, Marsha scored poorly on the retelling: could we direct teachers and reading specialists to a "Text Structure Analysis" (as we do a miscue analysis) when administering an IRI (informal reading inventory)?

Discussion

Adolescents represent a range of abilities in terms of reading. Some are clearly competent with a variety of texts and are developing speed and flexibility. Others lack fluency, vocabulary knowledge, or strategies that would help them grasp textual information. This study addressed several issues: What knowledge or lack of knowledge about text structure contributes to the reading process for a variety of adolescents? Another consideration is whether we should be teaching, in an explicit way, expository text structures. For example, is the explicit teaching of text structure effective or efficient for most students? And, is the explicit teaching of text structure advisable for adolescent disabled readers?

This study gives some evidence that fluent readers may have little need for explicit knowledge of text structures. Graduate students who simulated "disabled readers" as well as the teenager, (pseudo)named Anne, gave evidence that when there is very good comprehension, we do not need to be aware of text structures. There is an "automaticity" to the use of expository text structures that is analogous to phonic awareness; that is, many of us never were taught phonics explicitly; yet, we use a system that involves phonics whenever we decode an unfamiliar word. Similarly, most of us were never taught, nor do we explicitly know, the labels for the organizational patterns that writers generally use in expository text. In both of these cases, mature readers seem to utilize this component of reading, and its usefulness is at an automatic level.

When it is not automatic, knowledge of text structures may actually cause interference in the reading process. The session with Marsha suggests that knowledge of text structures can be irrelevant to comprehension. Anne, also, did not seem to gain comprehension from her knowledge of text structures. It may be that if there is a breakdown because of lack of fluency or lack of prior knowledge, then knowledge of organizational patterns doesn't help the comprehension, and, in fact, distracts from the cognitive processing energy that is available.

The work with Anne suggests that we need to measure more carefully the text-to-reader match. Teaching about text structures when the text is too easy is not worthwhile; Teaching about text structure when the text is very difficult does not seem helpful. Perhaps, further research could be sensitive to identifying text that is "in-between" ("instructional") in difficulty.

Furthermore, when we, usually fluent readers, are involved with such difficult text that we are functionally "disabled readers," we must consider what contributes to the lack of comprehension and what possibly could remediate the "disabled reader" situation. We may have perfect knowledge of expository text structures. That is, we may be able to identify specific text structures in a variety of texts; we can probably use these structures when writing or speaking. Yet, in the case of being a "disabled reader," we find the specific knowledge of text structures of little practical use. In the case of the graduate students described in the first part of this study, the component that they said was the greatest obstacle to comprehension was not text structure knowledge, but a lack of prior content knowledge.

Enlarging the discussion to include other variables of readability: print size, font, layout, micropropositional structures, etc. (see Singh, 1994), this exploratory study may suggest that if we have the background knowledge sufficient to comprehend a text, these other variables are not so significant. And if we do not have the background knowledge, the other variables of readability cannot assist us in deriving basic understanding of the text.

The work with Duncan was too limited to draw conclusions about any improvement that he may have experienced in his writing as a result of new knowledge about text structures. Yet, others have pursued this line of inquiry with good results (Selinger, 1992). It may be that Duncan learned something about text structure by having to face it in his writing, and that that transferred back to his reading. We do not have enough data to draw a conclusion about this. Further research about the writing-to-reading connection, as it concerns organizational patterns, is warranted.

From work with these few students as well as related commentary by graduate students, several hypotheses were developed and questions raised.

Limitations of the study

The problems of verbal-report data

Asking students what they know about text structure was done with Duncan, Anne, and Marsha. The results of these sessions were interesting but limited by the methodology. Garner (1987) and others have discussed the difficulties of asking students to tell what they know about texts. In interviews, students sometimes

1. fail to report knowledge of highly automated processes (e.g., for expert readers: using context to decide word meaning or automatic decoding)
2. do not have the verbal ability to express what they know, or are hindered by the social situation
3. mimic instructional language

All of these problems are severe limitations to gaining insight into cognitive processes.

Other limitations of the methodology

Miholic (1994) has provided a "Metacognitive reading awareness inventory"that allows the student to check off from a list of given items, rather than produce verbal reports. One item in this inventory does address the issue of the readability of the text in terms of macrostructure (#6b. "the writer may not have conveyed the ideas clearly.") This relates to MaryLou's observation of the inconsiderateness of the text that she was reading. It does not, though, ask the more specific question about the use of text structures.

In general, we do not have adequate methodologies for revealing the processing in action that we call reading.

Limitations related to reader and text match

It may be that explicit teaching of text structure would be helpful when the text is just a slight challenge for the reader. This study did not adequately measure the difficulty of the text passages for the reader at each reading event. The issue of prior knowledge is intimately connected to text difficulty. Perhaps, further research should rate prior knowledge and text difficulty at the beginning of any data collection session.

Conclusions and Implications

In ranking what matters most in comprehension, many variables compete and interact. Use of global coherence has been established as a significant part of comprehension. Yet, in this study when fluent readers encountered difficult text and there was a comprehension breakdown, minimal background knowledge was judged to be a more significant variable than knowledge of text structure. Global coherence probably cannot be separated from the

variables of prior knowledge/text difficulty, ability/developmental stage, and strategy use.

This study suggests that the practice of teaching expository text structures explicitly to improve reading is questionable. For students who generally have adequate comprehension, use of text structures is automatic and implicit. To make it explicit in those cases seems to be inefficient and a distraction from the main goal: deeper comprehension. For students who are struggling with comprehension (or still having problems with fluency), this study gives preliminary information that explicitly teaching expository text structures is not a good use of time or energy, if the intention is to directly improve reading comprehension. A limited number of student self-reports revealed that knowing the text structure of a passage does not help one understand a passage that is either moderately difficult or very difficult. More research needs to be done on the issue of the impact of teaching text structures on students' writing. And, if there is a positive correlation, we would like to see if the improvement in writing is followed by an improvement in reading.

This exploratory study suggests that the case study methodology can usefully be added to the work of looking deeper at the issues of text and reader interaction. Future case studies can continue this work by focusing on individuals with a variety of ages, aptitudes, backgrounds, and academic approaches. Further work could connect the methodologies used with groups (Slater, Graves, & Piche, 1985; Garner & Gillingham, 1987; Kletzion, 1992) by using those same procedures with particular individuals. Cumulative case studies can then build our knowledge base.

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